

U.S. Application No. 10/805,869
AMENDMENT

REMARKS

Applicants submit that the presently amended claims define an invention that is patentable over the prior art.

Claims 1-7 and 11-23 are pending. Claims 8-10 were previously canceled. Claim 1 is amended. Claims 11-23 are new. Claims 1, 11 and 21 are independent.

The amendments are supported by the specification. The addition of “rigid” to Claim 1 is supported, for example, by paragraph 0033 of the published application which discloses that the microimpactors may be made of “metal, a ceramic material, glass,” each of which is a rigid material.

Claim 11 is supported by Claim 1 and paragraph 0028 of the published application.

Claim 12 is supported by Claim 1 and paragraph 0028 of the published application.

Claim 13 is supported by Claim 1 and paragraph 0028 of the published application.

Claim 14 is supported by Claim 1 and paragraph 0023 of the published application.

Claim 15 is supported by Claim 1 and paragraph 0023 of the published application.

Claim 16 is supported by Claim 1 and paragraph 0023 of the published application.

Claim 17 is supported by Claim 1 and paragraph 0023 of the published application.

Claim 18 is supported by Claim 1 and paragraph 0026 of the published application.

Claim 19 is supported by Claim 1 and paragraph 0026 of the published application.

Claim 20 is supported by Claim 1 and paragraph 0026 of the published application.

Claim 21 is supported by Claim 1 and paragraphs 0023 to 0029 of the published application.

Claim 22 is supported by Claim 21 and paragraph 0004 of the published application.

Claim 23 is supported by Claim 21 and paragraph 0052 of the published application.

Applicants respectfully traverse the rejections in the Office Action. All of the claims define inventions that are patentable over all the art of record.

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Claims 1-23 are neither anticipated nor obvious from Stevens, U.S. Patent No. 3,633,751, which teaches that “flaps or tongues 14 are free to move” (column 6, lines 12-13). This is critical to using “backflow” to backwash and release any residue that may become trapped in the filter (column 1, lines 44-46). The microimpactors of the present invention are rigid and fixed; they are not free to move. Claim 1 has been amended to expressly state “rigid.” Independent Claims 11 and 21 expressly state “rigid.” Stevens teaches away from the presently claimed invention, because Stevens teaches flaps or tongues that are free to move, not rigid.

Claims 1-23 are neither anticipated nor obvious from Spencer, U.S. Patent No. 3,900,629, which discloses a “porous laminate 10 according to the present invention consists of a plurality of lamina 12, each lamina having a series of uniform width parallel slots 14 and strips 16 formed therein” and further discloses that “the lamina are stacked in intimate contact with each other such that these slots 14 overlap and extend transversely to the slots of each of adjacent lamina.” See column 2, lines 32-38. Thus, the lamina or sheets of Spencer are in contact with each other. In contrast, the present claims require space between the sheets. Independent Claims 1 and 11 each require “a plurality of spaced-apart rows of rigid microimpactors” and each row is in a separate sheet. Spencer teaches contact, not spaced-apart. Independent Claim 21 requires “a first spacer sheet between said first and second microimpactor sheets,” which is contrary to Spencer’s teaching of intimate contact.

The Office Action alleges that Claim 7 is obvious from Stevens, U.S. Patent No. 3,633,751, in view of Carr, U.S. Patent No. 3,999,964. Claim 7 adds the limitation of an upstream means for applying an electric charge to particles in the fluid stream. Carr discloses an electrostatic air cleaning apparatus where “grids 26 and 28 sandwich therebetween a sheet of foraminous filter media 30.” See column 3, lines 28-30. Applicants respectfully submit that Carr does not suggest the use of a lamina filter such as disclosed by Stevens, and further submit that Stevens does not suggest the use of the foraminous filter of Carr. Stevens discloses the use of metals and metal alloys (at column 2, line 75 to column 3, line 1) for the laminae, which do not

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appear suitable as substitutes for the foraminous filter of Carr. Thus, the Office Action appears erroneous in suggesting a combination of Stevens and Carr.

Claim 11 is directed to a microimpactor system with a defined spacing between the rigid sheets of microimpactors.

Claims 12-13 add a limitation on the spacing between the sheets.

Claims 14-15 add a limitation on the width of the microimpactors.

Claims 16-17 add a limitation on the spacing between the microimpactors in a sheet.

Claims 18-20 add a limitation on the thickness of the microimpactor sheet.

Claim 21 is directed to a microimpactor system of two or more rigid sheets.

Claim 22 is limited to microimpactor systems that comprise micropillars according to U.S. Patent No. 6,110,247.

Claim 23 is limited to a microimpactor system wherein the width and spacing of the microimpactors in the first sheet, is different from the width and spacing of the microimpactors in the second sheet.

Applicants solicit an allowance of all claims.

Respectfully submitted,

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